

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
27 April 2006 (27.04.2006)

PCT

(10) International Publication Number  
**WO 2006/043163 A1**

(51) International Patent Classification:  
*H01M 2/10* (2006.01)

[JP/JP]; 4-1-E-1601 Nishihiranumacho, Nishi-ku, Yokohama-shi, Kanagawa 220-0024 (JP).

(21) International Application Number:  
PCT/IB2005/003150

(74) Agent: SIEFFERT, Kent, J.; Shumaker & Sieffert, P.A., 8425 Seasons Parkway, Suite 105, St. Paul, MN 55125 (US).

(22) International Filing Date: 21 October 2005 (21.10.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2004-308346 22 October 2004 (22.10.2004) JP  
2005-301177 17 October 2005 (17.10.2005) JP

(71) Applicant (for all designated States except US): NISSAN MOTOR CO., LTD. [JP/JP]; 2 Takara-cho, Kanagawa-ku, Yokohama-shi, Kanagawa 221-0023 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

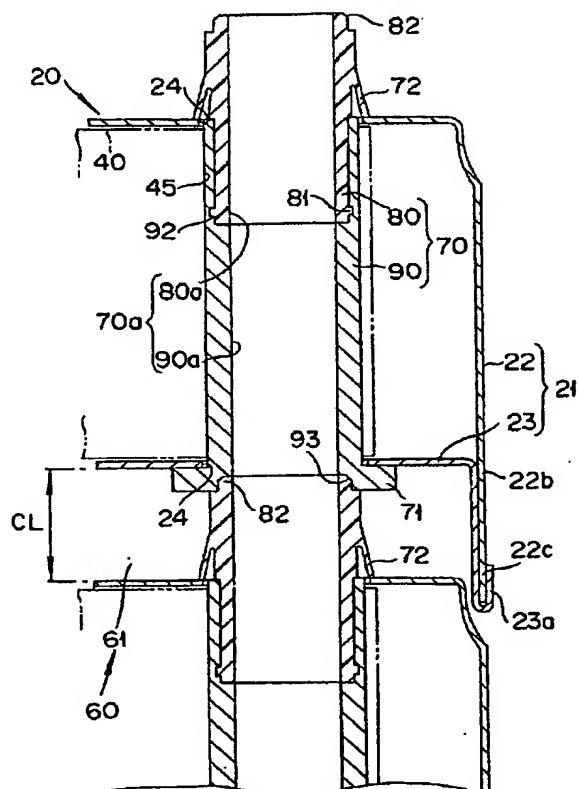
(72) Inventor; and

(75) Inventor/Applicant (for US only): HASHIDA, Osamu

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: BATTERY MODULE AND BATTERY ASSEMBLY



(57) Abstract: The invention provides a battery module, which forms an item unit for construction of a battery assembly, comprising a cell unit having a plurality of cells, and a housing and a cover to store the cell unit. The battery module further comprises a shaft member inserted into a through-hole provided in the cell unit and a through-hole provided in the housing and a through-hole provided in the cover, wherein the shaft member comprises a length that allows protrusion from each of the housing and the cover. Furthermore, during construction of the battery module, the shaft member doubles as a jig for insertion of the cover, the cell unit, and the housing in said order for each of the modules within the battery assembly.



European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*